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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application of:
SOKICHI NOSAKA ET AL
Ser. No.: 09/772,137
Filed: 1/29/01
)

) A POWER TRANSMISSION BELT
HAVING A MARK THEREON AND A
METHOD OF PROVIDING A MARK ON
A POWER TRANSMISSION BELT
)

) Examiner: Marcus Charles
Art Unit: 3682
)

APPELLANT'S REPLY BRIEF UNDER 37 CFR §41.41

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313

Sir:

The Examiner has withdrawn all previous rejections. There are now two issues for appeal.

Issue No. 1

Whether claims 1, 4-7, 9-20 and 40 are obvious under 35 USC §103 over Japanese Patent Publication No. 10252833 (Japan '833) in view of U.S. Patent No. 6,103,349 (Matsumoto¹).

Issue No. 2

Whether claims 38, 39 and 41 are obvious under 35 USC §103 over Matsumoto in view of Japan '833.

¹ Claim 8, included by the Examiner in the rejection, was cancelled and is not at issue.

GROUPING OF CLAIMS

The claims in each of the groups of claims do not stand or fall together.

ARGUMENT

Claim 1

Claim 1 requires the step of forming a mark directly on at least one of two laterally spaced belt side surfaces by inscribing thereon to a depth of 0.1 to 1 mm. At least a part of the mark is formed directly on a portion of at least one of the side surfaces that engages a cooperating pulley in use.

The Examiner argues that Japan '833 teaches that marking to a depth of 0.1 to 1.0 mm "on the pulley engaging surface is sufficient enough to maintain the marking without providing a bad influence on the belt and interfering with the mechanical property of the belt" (Examiner's Answer page 3, lines 5-7).

While Japan '833 does teach inscription of a mark to a depth of 0.1 to 1.0 mm on a pulley engaging surface, it does not teach inscription at all on any pulley engaging **side surface of a belt**. **In fact, it is respectfully submitted that Japan '833 would direct one skilled in the art away from using the same method disclosed therein to inscribe a pulley engaging side surface of a belt.**

The teachings of the '833 patent with respect to inscription, and the particular depth thereof, must be viewed in context. Japan '833 is limited to disclosing inscription on the back side of a belt. It is also significant to note, as shown in Fig. 4, the depth of inscription is contemplated to be such that it does not closely approach the load carrying cords, or

components, or component layers, other than the relatively thick, homogeneous tension rubber layer shown. In fact, Japan '833 specifically cautions against the "danger of having a thermal bad influence on the core wire 3 currently laid under 4" (see paragraph [0022] in translation provided by the Examiner). Consistent with conventional wisdom that particularly load carrying components should not be altered, Japan '833 teaches lasing such that the load carrying members are not thermally damaged, which is accomplished by: (a) lasing on the back surface of the belt and not at the pulley engaging side surfaces; and (b) lasing only to a distance significantly spaced from load carrying members.

It is also important that the written description in Japan '833 be read in conjunction with the drawings. No specific dimensions of the overall belt and belt components are set forth that would fully delineate the relationship between the depth of the inscription and the specific belt components, such as the load carrying members. For example, Japan '833 cannot be viewed as a generic description that this depth is appropriate no matter what the configuration of the belt is or where the inscription is located. For example, it is conceivable that the belt could have a very limited dimension between the inside and outside thereof as would cause inscription to a depth of 1 mm to be damaging to, or potentially destructive of, the belt. Accordingly, it is critical that the teachings of Japan '833 be viewed with respect to the drawings, wherein it can be seen, as in Fig. 4, that the Appellant, the owner of Japan '833, considered it important, as did the remainder of the industry, that the load carrying components not be altered, as by heating through an inscription process.

By reason of the construction of a conventional power transmission belt, it is significantly different to alter a back side layer, shown in Japan '833 as a thickened layer

of rubber, than a pulley engaging side surface, wherein normally multiple components, including load carrying members, are directly affected.

The specific cautionary language in Japan '833 with respect to not thermally altering the load carrying cords would thus teach one skilled in the art away from inscribing on a pulley engaging side surface of a belt. Consistent with this teaching is the disclosure in Matsumoto. Matsumoto describes that, with one exception, all applications of a mark on the belt side surface involve using a separately added hiding layer 4 that represents an addition to, rather than an alteration of, the side surfaces, as by inscription to a certain depth².

Matsumoto does not address the possibility of alteration of a belt side surface by inscription and, to assure longevity of the mark, places the same on other than pulley contacting portions of the belt side surfaces. In Appellant's Brief on Appeal herein, on page 5, in the last five lines thereof, through page 8, line 2, a detailed summary of Matsumoto's disclosure is made as it is expressly limited to mark application on **non-contact surfaces**.

Thus, when one skilled in the art views the combined disclosures in Japan '833 and Matsumoto, he/she would be directed not to alter the belt side surfaces other than by the application of a hiding layer with which the mark is associated, or applying printing components directly thereon.

² Appellant notes that, as described in the bridging paragraph between pages 7 and 8 of its Brief on Appeal, Matsumoto briefly suggests the possibility of mark application without a hiding layer. There is no teaching or suggestion of any alteration using this alternative method other than by "printing or other methods using alphabets as numbers" (col. 3, lines 50, 51).

In conclusion, Japan '833 teaches inscription only on a back side of a belt, and then only to a partial depth in a thick layer such that the inscription does not penetrate to be in proximity to load carrying members. Japan '833 teaches away from inscription to a location in close proximity to critical belt components, i.e. load carrying members. Matsumoto does not teach alteration of a belt side surface by inscription, or for that matter any means that might alter the functional components of a belt other than by addition of material thereto, be it a hiding layer or a printing material. In fact, inscription with Matsumoto would be unnecessary given that Matsumoto teaches application of marks on only non-contact surfaces, whereat surface wear is not a critical consideration. It would not be obvious to modify Japan '833 in light of Matsumoto to arrive at the method in claim 1.

Claims 4-7 and 9-20

Claims 4-7 and 9-20 depend cognately from claim 1 and recite further significant limitations to further distinguish over the cited prior art.

As one example, claim 6 specifically recites a load carrying member on the belt extending lengthwise with respect to the body. As noted above, Japan '833 specifically teaches away from thermally altering such a load carrying member which is conventionally exposed at, or near, a belt side surface.

Appellant submits that since the initial rejection of these claims relied upon the combination of Japan '833 and Matsumoto, the arguments advanced in Appellant's opening Brief on Appeal in many respects remain applicable.

Appellant admits that Japan '833 does disclose using a contrasting color in the "hollow" of the mark as recited in claims 7, 9, and 15-17.

Claim 40

Claim 40 requires inscribing the mark to a depth of 0.1 to 1 mm with a laser beam on at least one of the laterally spaced side surfaces of a belt. Claim 40 differs from claim 1 by, among other things, not requiring that the mark be on a portion of a side surface that directly engages a pulley. However, the arguments advanced relative to the allowability of claim 1 otherwise generally apply equally to claim 40³.

Issue No. 2

Claim 38

Claim 38, as claim 1, requires inscription to a depth of 0.1 to 1 mm at least partially on a portion of a lateral side surface that engages a cooperating pulley. The Examiner's rejection uses the same combination of references used in rejecting claim 1, but uses Matsumoto, instead of Japan '833, as the primary reference.

The Examiner states that Matsumoto also discloses that the marking (3) can be inscribed directly provided on the lateral side surface of the belt... by printing or other methods (page 6, lines 2-4 of Examiner's Answer). The Examiner argues that "other methods" as set forth "may include laser"

³ Claim 1 differs from claim 40 also by not requiring inscription by lasing, which is a limitation brought in by claim 4, and claims dependent therefrom.

Appellant respectfully disagrees with the statement that the language in column 4, lines 6-16 of Matsumoto, amounts to a disclosure of any mark application means, such as lasing. Matsumoto's teachings are consistent throughout; that being that no part of the belt be structurally altered other than by addition of material, be it a hiding layer or a printing material.

Appellant respectfully submits that a fair reading of Matsumoto is that Matsumoto's description, in column 4, lines 7-12, proposes nothing more than that a mark can be placed directly upon the belt as opposed to directly upon a substrate layer which in turn is applied to the belt. The language in column 3, if read as it should be consistently with the remainder of Matsumoto's teachings, does not suggest belt alteration other than by addition of material thereto.

The other arguments advanced relative to the allowability of claim 1 apply likewise to claim 38.

Claim 39

Claim 39 includes the material contrasting with the operative side surface.

Claim 41

Claim 41 recites the step of forming the mark on a belt side surface to a depth of 0.1 to 1 mm so that at least a part of the mark is formed in the tension layer and on the at least one load carrying member.

As noted above, Japan '833 teaches away from altering load carrying members. Japan '833 thus teaches specifically away from that which is set forth in claim 41.

Matsumoto does not teach or suggest any alteration, other than by addition, that might produce a structural change in a belt side surface and thus, in combination with Japan '833, does not teach or suggest the method in claim 41.

Conclusion

The prior art cited by the Examiner is consistent in its teaching that side surfaces of power transmission belts should not be structurally altered, as by inscription. In a very mature industry, the only teaching of inscribing to form a mark on a belt side surface appears in Appellant's own teachings herein. Accordingly, it is respectfully requested that the Board reverse the Examiner's rejection of claims 1, 4-7, 9-20 and 38-41.

Respectfully submitted,

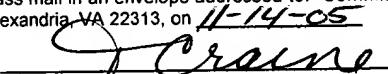
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